

### ABSTRACT

The invention concerns a system, device, kit and method for detecting the presence, or concentration of a target in a sample. An assay set comprising at least two spaced apart electrodes is used, comprising a recognition moiety, capable of specific binding to the target, which is attached to at least one of the electrodes or the substrate therein between. If the recognition moiety binds the target then a conductive bridge can be formed between the electrodes, based on the complex between the recognition moiety and the target. The conductive bridge is formed by using nucleation-center forming entities attached to the complexes or to the targets from which a conductive substance is substantially grown. Alternatively the conducting bridge forms a conductive polymer between the electrodes.